

Amendment dated August 18, 2004
Appl. No. 10/616,342
Atty. Docket No. 00100.66.0068

In the claims:

1-26. (cancelled)

27. (currently amended): A method comprising the steps of:

directly attaching a first semiconductor die to a package substrate;
forming electrical connections between the first semiconductor die and the package substrate;

~~securing the electrical connections;~~

encapsulating the first semiconductor die in a structure having a planar top surface;

placing a second semiconductor die having a top surface in a die package;

attaching the die package to the package substrate; and

forming electrical connections between the die package and the package substrate;

wherein the encapsulated top surface and the second semiconductor top surface are of equal distance from the package substrate.

28. (original): The method as in Claim 27, wherein the step of placing the second semiconductor die in a die package includes placing the semiconductor die in a ball grid array package.

29. (withdrawn): The method as in Claim 27, wherein the steps of directly attaching and forming electrical connections are performed using a flip-chip process.

30. (withdrawn): The method as in Claim 27, wherein the steps of attaching and forming electrical connections are performed using surface mount technology reflow.

31. (original): The method as in Claim 27, wherein the step of directly attaching includes the use of adhesives.

32. (original): The method as in Claim 27, wherein the steps of forming electrical connections include wire-bonding.

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33. (cancelled): The method as in Claim 27, wherein securing the electrical connections includes encapsulating the first semiconductor die.
34. (withdrawn): The method as in Claim 27, wherein securing the electrical connections includes underfilling the first semiconductor die.
35. (original): The method as in Claim 27, further including the step of attaching solder balls to an underside of the package substrate.
36. (original): The method as in Claim 27, wherein the package substrate has a footprint of one of 35mm X 35mm, 31mm X 31mm, 27mm X 27mm, 37.5mm X 37.5mm, 40mm X 40mm, 42mm X 42mm, or 42.5mm X 42.5mm.
37. (original): The method as in Claim 27, further including the step of attaching a heat sink to the package substrate.
38. (withdrawn): The method as in Claim 37, further including the step of positioning a shim on top of the first semiconductor die such that a top of the shim and a top surface of the die package are of substantially equal distance from a surface of the package substrate.
39. (original): The method as in Claim 27, further including the step of testing the first semiconductor die prior to the step of attaching the die package to the package substrate.
40. (original): The method as in Claim 27, further including the step of testing the second semiconductor die after the step of placing the second semiconductor die in a die package and prior to the step of attaching the die package.

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41. (cancelled): The method as in claim 33, wherein the encapsulation having a planar top surface; and

the second semiconductor die having a top surface;

wherein the encapsulation top surface and the second semiconductor die top surface are of equal distance from the package substrate.

42. (cancelled): The method as in claim 37, further including the step of encapsulating the first semiconductor die, wherein the encapsulation top surface includes a planar top surface, such that the encapsulation top surface and a top surface of the die package are of equal distance from a surface of the package substrate.

43. (currently amended): A method of forming a multi-die module, comprising:

mounting a first semiconductor die to a module substrate;

forming an electrical connection between the first semiconductor die and the module substrate;

encapsulating the first semiconductor die in a rectangular structure;

placing a second semiconductor die in a corresponding die package;

mounting the die package to the module substrate; and

forming an electrical connection between the die package and the module substrate;

wherein the encapsulation structure top and a top surface of the die package are of equal distance from a surface of the module substrate.

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44. (cancelled): The method as in claim 43, wherein the encapsulation structure top and a top surface of the die package are of equal distance from a surface of the module substrate.

45. (previously presented): The method as in claim 43, further including attaching a heat sink to the module substrate.